

Patent claims

1. Ceiling support for holding a technical medical radiation source,

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with a telescope (2) made of several telescopable tubes (3),

10 which is connected via a first cable (12) with a device for compensation of the weight of the radiation source to be installed on the free end of the telescope (2),

wherein the device for compensation is comprised of:

15 a cable drum (11) for winding and unwinding the first cable (12),

a spiral winch (15) which is connected with the cable drum (11),

20 wherein the spiral winch (15) is connected via a second cable (16) with a sliding element (8) which can be shifted against the force of a pressure spring (6), and

25 wherein a radius of the spiral winch (15) decreases with increasing pressure of the pressure spring (6) so that a torque compensating the weight remains essentially constant regardless of the particular length of the telescope (2).

30 2. Ceiling support as defined in claim 1, wherein the spiral winch (15) is installed firmly on the cable drum (11).

3. Ceiling support as defined in claim 1 or 2, wherein the decrease in the radius is not linear.

35 4. Ceiling support as defined in one of the preceding claims, wherein the spiral winch (15) is a hyperbolic spiral winch.

5. Ceiling support as defined in one of the preceding claims, wherein two pressure springs (6) are provided which are positioned on guide tubes (5) running parallel to each 5 other.

6. Ceiling support as defined in one of the preceding claims, wherein the sliding element is a crosshead (8) which can be slid on the guide tubes (5) against the force of the 10 pressure springs (6).

7. Ceiling support as defined in one of the preceding claims, wherein the second cable (16) is wound around a roller (9) installed on the crosshead (8), and is secured on 15 its one end to a frame (1) holding the telescope (2) and with its other end at the maximum radius of the spiral winch (15).

8. Ceiling support as defined in one of the preceding claims, wherein the spiral winch (15) is installed between 20 the two pressure springs (6).

9. Ceiling support as defined in one of the preceding claims, wherein two first (12) and two second cables (16) are provided.

25 10. Ceiling support as defined in one of the preceding claims, wherein the spiral winch (15) is connected with a permanent magnet brake (17) such that the spiral winch (15) will be braked when there is a power failure.

30 11. Ceiling support as defined in one of the preceding claims, wherein the spiral winch (15) is connected with an electro motor drive (20, 21, 22).

35 12. Ceiling support as defined in one of the preceding claims, wherein a device (23) is provided for the setting of

a pre-tension of the pressure spring/s (6) to be exerted on the sliding element (8).

12. Ceiling support as defined in one of the preceding  
5 claims, wherein a device for the stepless setting of the spring rate is provided which preferably is a clamping cuff (23) which presses the pressure spring (6) against the guide tube (5).

10 14. Ceiling support as defined in one of the preceding claims, wherein several axial undercut grooves (26) are provided on one interior side of at least one of the tubes (3) so that essentially ridge-shaped guide rails (25) are mounted via a screw connection with the groove stones in the grooves  
15 (26).